

## CLAIMS

1. A radial tilt pad bearing assembly comprising:
  - an outer carrier (12);
  - a plurality of tilt pads (14) retained within the outer carrier; and
  - 5 - a corresponding plurality of retaining pins (50) to retain the tilt pads in given circumferential positions; each fixed in the bearing assembly outer carrier so as to abut a side face (38) of a cavity (28) in the corresponding tilt pad, characterised in that at least one retaining pin (50) and the corresponding cavity (28) are respectively shaped such that, when in use, a clearance ( $c$ ) in a plane transverse to the axes of  
10 the bearing assembly and the tilt pad between the retaining pin (50) and the side face (38) is lesser at a first location (54) which lies substantially at the inner surface of the carrier (12), than at all corresponding locations at radially inner portions of the side face, with respect to the first location, whereby  
a contact point (54, 54') between the retaining pin (50) and the tilt pad (14) when in use, lies  
15 substantially at the inner surface of the outer carrier (12), and whereby the tilt pad (14) is accordingly able to tilt without being substantially displaced circumferentially about the outer carrier (12).
2. A radial tilt pad bearing assembly according to claim 1, wherein the retaining pin (50)  
20 has a tapered cross-section in a plane transverse to the axes of the bearing assembly and the tilt pad.
3. A radial tilt pad bearing assembly according to claim 2 wherein taper angles  $\alpha$  on both  
25 sides of the cross-section of the retaining pin (50) are equal.
4. A radial tilt pad bearing assembly according to claim 1, wherein the cavity (28) is shaped to have a lesser dimension ( $d$ ) in a plane transverse to the axes of the bearing assembly and the tilt pad at the first location (64), than at all corresponding locations at radially inner  
30 portions of the side face (68), with respect to the first location (64).

5. A radial tilt pad bearing assembly according to claim 4, wherein the cavity (62) has a tapered cross-section in a plane transverse to the axes of the bearing assembly (10) and the tilt pad (14).
- 5 6. A radial tilt pad bearing assembly according to claim 5 wherein taper angles  $\beta$  on both sides of the cross-section of the cavity (62) are equal.
7. A radial tilt pad bearing assembly according to any preceding claim wherein the retaining pin (50) and the cavity (28) are each elongate in the axial direction (A, A') of the tilt  
10 pad (14) and the bearing assembly (10).
8. A radial tilt pad bearing assembly according to any preceding claim, wherein the cavity (28) occupies only a part of the axial extent of the tilt pad (14), the retaining pin (50) having a compatible axial dimension.  
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9. A radial tilt pad bearing assembly according to any preceding claim, wherein the retaining pin (50) is pyramidal in shape.
10. A radial tilt pad bearing assembly according to claim 9 wherein such pyramid has a  
20 square or rectangular base.
11. A radial tilt pad bearing assembly according to claim 9 or claim 10 wherein the pyramid is truncated.
- 25 12. A radial tilt pad bearing assembly according to any of claims 1-6, or 8, wherein the retaining pin is conical or truncated-conical in shape.
- 30 13. A radial tilt pad bearing assembly according to any preceding claim, wherein more than one combination of cavity (28) and pin (50) are provided on each tilt pad, aligned in the axial direction (A, A') of the pad (14) and the bearing assembly (10).

14. A radial tilt pad bearing assembly substantially as described and/or as illustrated in Figs. 5-7 of the accompanying drawings.